Amendments to the Specification:

[0001] The present application is a divisional of U.S. Patent ~~Application Serial~~ No. **6,662,868 issued on December 16, 2003** ~~09/696,427 filed on October 25, 2000~~, which is a continuation-in-part of **now abandoned** U.S. Patent Application Serial No. 09/563,959 filed on May 3, 2000**, which is a continuation of U.S. Patent No. 6,092,596 issued on July 25, 2000**.

[0093] In Figure 9, a casing hanger 352 is to be clamped within an upper casing section 303 and a lower casing section 330. The hanger 352 has a flow-by passage 360, and has a casing 354 threaded to its lower end. **Lower casing section 330 has a series of threaded bores 328 arranged around the circumference. Only one of these bores is visible in the figure. The upper casing section 303 has a shoulder 332 which has a series of through bores 334 each of which registers with one of the threaded blind bores 328 in casing section 330. Threaded studs 336 are fitted in each of the bores. Each stud 336 has a lower end which screws into one of the blind bores 328. The upper casing section 303 is then placed over the upstanding part of the stud, and a further nut 342 is threaded onto the top of the stud.**

[0111] A common problem encountered in completing a subsea wellhead is the inability to properly control the tension in the casing after the subsea casing hanger has been landed on its shoulder in the Subsea wellhead. Currently, the casing tension is provided only by the residual load between the Subsea casing hanger and its running tool just prior to landing in the subsea wellhead. This method is relatively imprecise because the casing weight can be significantly or sometimes totally dissipated by differential sticking of the casing string in the hole. By incorporating a clamping arrangement of the present invention into the subset wellhead, a precise amount of tension may be added to the casing. As shown in Fig. 17, the present invention may be modified for use in a subset wellhead 900. Typically, an outer casing or wellhead 902 is anchored to the seafloor. Preferably, the clamping arrangement 904 is incorporated into the outer casing or wellhead 902 itself, as shown in Fig. 17, however, it may be a separate assembly, as previously described. An externally tapered

annular sleeve 906 is located around the outer casing or wellhead 902. An annular component 908 having a plurality of bores or holes 914 there through is positioned substantially around and outside the sleeve 906. Each bore has a shoulder 916 formed therein, for the purpose creating a piston area between seal sets 928, which is used to hydraulically tension the system and ultimately retaining a fastener. The annular component 908 has a corresponding externally tapered surface for engaging the sleeve 906. The outer casing or wellhead is preferably adapted for receiving threaded bolts, screws or other suitable fasteners 910 into correspondingly threaded bores 912 formed therein. The bolts preferably have a flange 918 capable of engaging the shoulder 916 of the holes 914. The hole 914 corresponds generally to the threaded bore 912 such that the bolt 910 may pass through the holes 914 and engage the bore 912. As the bolt 910 engages the threaded bore 912, an annular pocket area <u>**913**</u> is created between the flange 918 and shoulder 916. When hydraulic fluid is introduced in the annular pocket area <u>**913**</u> under sufficient pressure, the effect is that the annular component 908 is pushed downward. This downward movement causes the corresponding tapered surfaces of the annular component and the sleeve to engage and create a clamping force which is directed inwardly and which will deflect the outer casing <u>**902**</u> or wellhead bore inwardly as well. Simultaneously to deflecting the outer casing <u>**902**</u> or wellhead bore inwards the lower section 930 of the annular component 908 flares a lower rim 932 on outer casing or wellhead 902 outwards so as to friction lock the outer casing or wellhead 902 into the conductor receptacle 920. As the inner casing 922 and hanger 924 are moved into location, prior to any clamping force being exerted, the casing 922 is typically cemented or otherwise affixed in the well bore. It is often desirable to have a certain degree of tension in the inner casing after it has been cemented. Using the prior art methods of shoulders or slips, is impossible to achieve in subsea wellhead applications. The present invention, however, allows the inner casing 922 to be positioned below it's final position, in a wider section of the outer casing or wellhead 902, where the fluid returns generated, while the inner casing 922 is cemented in, can flow past the casing hanger 924. Once the cement has set the casing 922 can be stretched upwards into position using the casing running string. This creates tension in the casing 922. By pulling the casing 922 up a predetermined distance, or by using suitable measuring equipment, tension in the casing 922 may be set relatively precisely. Once the casing 922 and hanger 924 are pulled into position,

hydraulic pressure is remotely introduced in the annular pockets **913** between the seal sets 928, thereby generating a clamping force between the bore of the outer casing 902 and the outer surface of the casing hanger 924, for maintaining the position of the hanger 924 and casing 922. A secondary effect of the gripping action of the outer casing or wellhead bore on the casing hanger is to compress a number of annular seals 926, so as to seal the casing hanger outer diameter against the inner bore of the outer casing or wellhead 902.

[0112] As with the inner casing, it is often difficult to predict the precise terminating location of the outer riser at the surface, especially in deep water wells. Due to production tolerances in the joints and the fact that the riser it typically landed on a fixed shoulder at the subset wellhead, shakeout of the outer riser typically involves having to cut the riser to the desired length once it has been completely installed. This procedure is time consuming and expensive. Figure 18 shows a first riser segment 950 which incorporates a receiving area 952 having an increased inner diameter. A second riser segment 954 has a lower end 956 which has an outer diameter slightly smaller than the inner diameter of the receiving area 952 of the first riser segment 950. Additionally a larger diameter pipe section 962 is shown onto which inverted air cans 960 are affixed. The air cans are used to impart upward tension to the first riser segment 954, to counter act the weight of the riser segment which reaches all the way to the ocean floor. **Pipe section 962 and air cans 960 thereby form a tensioner riser.** The, so called, tensioner riser ~~960 and 962~~ is at its upper end permanently affixed to a clamping arrangement 958. The relative positions, with respect of the deck 968, of the tensioner riser clamping arrangement 958~~, as indicated by X 964~~ and of the top of the terminating wellhead 970~~, as indicated by Y 966,~~ are important to the eventual layout of the production facility. The present invention may be used to more quickly and easily space out the clamping assembly 958 and the wellhead 970. Following installation and temporary suspension of the tensioner riser 962 and 960 from the deck 968, the first riser segment 950 is installed through the temporary suspended clamp assembly 958. The receiving area 952 is configured of sufficient length to insure that at least a section of the receiving area 952, of equivalent length to the claiming assembly 958 is located in the clamping assembly, this notwithstanding the fact that production tolerances will cause the first riser section 950 to be of uncertain length. Subsequently, the lower end 956 of the second riser segment 954 may

be positioned into the receiving area 952 of the first riser segment 950. Depending on the length of the lower end, a relatively large degree of adjustability may be achieved. Once the lower end 956 and the receiving end 952 are properly aligned, the clamping arrangement 958 disposed around the receiving area 952 may be used to provide a clamping force against the receiving end, thereby attaching the tensioned riser 960 and 962 to the outer diameter of the first riser segment 950 and clamping the lower end 956 of the second riser segment 954 in the receiving end 952. The lower end 956 of the second riser segment 954 may have thickened walls to provide extra strength and to enable application of sufficient friction force.

[0113] Although the previous embodiments of the present invention show a clamping arrangement positioned externally of an outer pipe or tubular member, it should be understood that the clamping arrangement may be located in any suitable position for clamping or gripping the inner pipe. For instance, and as shown in Fig. 19, the clamping arrangement 1000 may comprise a housing 1002 which may be integrated into an outer pipe or casing 1004. An inner annular, tapered clamping segment or ring 1006 is positioned in contact with an inner casing hanger 1008 or similar structure which must be clamped or gripped. The clamping ring preferably has an inner surface 1010 which is substantially parallel to the outer surface 1012 of the hanger 1008 and a tapered outer surface 1014. An outer annular tapered clamping segment or ring 1016 is positioned radially outwardly of the first ring 1006 and has a tapered inner surface 1018 which corresponds to and is in contact with the tapered outer surface of the first ring 1014 and an outer surface 1020 which is preferably substantially parallel to the hanger 1008. The housing 1002 is formed such that the lower or bottom surface 1022 forms the upper surface or roof of a pressure chamber 1024. The pressure chamber includes a port 1026 for introducing a hydraulic fluid into the chamber 1024. Preferably, the chamber also includes a bolt or screw ~~1026~~ 1027 extending through the floor 1028 of the chamber 1024. As fluid is introduced into the chamber 1024, the outer tapered ring 1016 is pushed axially upward. As the outer ring 1016 moves, the corresponding tapered inner surface 1018 and tapered outer surface 1014 cause an inward deflection of the inner ring 1006 thereby causing a gripping or clamping force to be exerted by the inner ring 1006 against the hanger 1008. A retaining structure or ring 1030, which is

preferably prevents outward movement of the outer ring 1016. Once the outer ring 1016 has been moved far enough to create a sufficient clamping force, the bolt ~~1026~~ 1027 may be threaded through the floor 1028 of the chamber 1024 and positioned against the bottom surface 1022 of the outer ring 1016, thereby creating a mechanical stop or lock to prevent downward axial movement of the outer ring, even if pressure in the chamber is lost or decreased. The inner ring 1008 may be formed from a plurality of independent sections or may be a single, continuous ring. Where the inner ring 1008 is formed of sections, a band or O-ring ~~1030~~ 1031 may located around the outer surface 1014 of each sections to aid in retaining the sections in place during use.